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*The Bulletin of the College of Charleston Museum* is a comparatively recent addition to the list of publications whose object is to popularize the work of museums and keep the public informed of what is being done. The December number is mainly devoted to an article on whales and dolphins and gives a brief account of the cetacea, notes on some of the museum examples of this group and a list of books on whales. The number also contains references to the occurrence of the roseate spoonbill near Charleston. Under the direction of Mr. Rea, the curator, the Charleston Museum is being rearranged, relabeled and generally 'modernized.'

With the beginning of the present year, the *American Electrician* has become part of the *Electrical World and Engineer*, and the journal will be known as *The Electrical World*.

#### SOCIETIES AND ACADEMIES.

##### THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 608th meeting was held on December 2, 1905.

Mr. J. E. Burbank spoke on 'Recent Work in Atmospheric Electricity,' with exhibition of instruments of the Carnegie Institution. The fundamental problem in atmospheric electricity is the source of the earth's electric field. The recent researches of Professors Elster and Geitel, Ebert, Gerdien and others have brought four new factors into the study, namely, the rate of dissipation of the earth's so-called permanent charge into the atmosphere; the ionization of the atmosphere; the action of the radioactive emanations present in the atmosphere, and the circulation of the atmospheric electricity in the form of vertical and convection currents.

The paper was largely devoted to a description of the instruments and methods used in measuring the ionization. The dispersion apparatus of Elster and Geitel and Ebert's aspiration apparatus or ion counter were described.

A new instrument recently devised by Dr. Gerdien, of Göttingen, Germany, was then shown. This is similar to Ebert's and consists of an outer cylinder 20 cm. in diameter

through which air is drawn by means of a fan driven by hand. The inner electrode consists of a tube 1.4 cm. in diameter and 24 cm. long and is mounted on the post which carries the aluminum leaves of the electroscope. The loss in charge of this inner electrode is found for an interval of time, usually five minutes, during which air is drawn through the apparatus. From the known dimensions and electrostatic capacity of this cylinder condenser and its loss of potential we can calculate in absolute units the quantity  $\lambda$  represented by the product of the ionic charge ( $e$ ) into the number ( $n$ ) of ions per c.c. and into mean specific velocity ( $v$ ) (cms./sec. volts/cm.), and is known as the specific conductivity. The discussion of the formula showed that  $\lambda = env$  was independent of the velocity of the air current within wide limits; hence independent of wind, etc. The specific conductivity is not a constant as with metals, but varies with the ionic content of the air.

Dr. Gerdien has used this instrument to measure conductivity in balloon ascensions to a height of 5,700 meters, and from a series of such observations together with observations of potential gradient has deduced values for the intensity of the vertical currents. These currents on the earth's surface amount to about  $2.4 \times 10^{-16}$  amperes per sq. cm.; at a height of 2,500 meters  $0.8 \times 10^{-16}$ , and at 5,000 meters  $0.3 \times 10^{-16}$  amperes, per sq. cm.

This instrument can be used in dense fogs or even during rain. The author secured some results on a sea voyage from Liverpool to Boston showing that  $\lambda$  for positive charges was of the same magnitude as for negative charges. Curves were exhibited showing the values of the conductivity when passing into and through a fog bank and also during a light shower. The values of  $\lambda$  in dense fog are about one tenth to one twentieth the value in clear air, but curves for both positive and negative conductivity follow each other very closely even in very rapid changes of ionization.

Professor Ebert has reported to Dr. Bauer that the eclipse observations on August 30, 1905, made by him at Palma, Majorca, in the Mediterranean with his ion counter gave a

marked decrease in the negative ionization of the air during totality. The observations of conductivity taken with this new instrument by Mr. Bowen, a member of the Carnegie Institution party at Battle Harbor, Labrador, seventy-five miles south of totality belt, show also a marked decrease in the negative conductivity during the eclipse. The observations at Cheltenham, Md., with a similar conductivity instrument showed a fair agreement with the others, but in much less degree.

Mr. G. K. Burgess then spoke on the 'Monochromatic Radiation of Metals.' The object of the paper was to interpret the observations of Dr. Waidner and the author on the departure of platinum from black-body radiation for red, green and blue light in terms of the now better known values of the higher temperatures involved and as expressed by Wien's law in a form first suggested by Lucas. Discussion of the formulæ leads to the conclusion that the reciprocals of the temperatures of a black body and any substance having the same photometric brightness are directly proportional. For platinum the ratio is about 1.03; so the temperatures obtained from a platinum optical pyrometer, without correction, would be from 6 to 9 per cent. too low. But 50 observations between 996° and 1,988° absolute, using red light, furnish constants for the formulæ, by the aid of which the nominal temperatures are corrected, the maximum difference being only 3.5°; thus 1,814° observed is raised to 1,989.1°—a difference of only 1.1° from that given by the standard Holborn-Kurlbaum optical pyrometer. The important result follows that for many purposes a simple platinum strip may replace the elaborate experimental black-body.

Similar results were obtained with palladium. The speaker also gave a comparison of the electrical and thermal constants of several metals having high melting-points. (See Bulletin, Bureau of Standards.)

THE 609th meeting was held on December 16, 1905.

The retiring president, Mr. George W. Littlehales, of the Hydrographic Office, delivered an address on 'The Progress of Science

as Exemplified in Terrestrial Magnetism.' He gave a very clear sketch of the history of this branch of science, pointing out the phases that the problem had assumed and the specific contributions to the modern theory made by the leading magneticians.

CHARLES K. WEAD,  
*Secretary.*

#### THE CHEMICAL SOCIETY OF WASHINGTON.

THE 163d regular and the 22d annual meeting of the society was held on January 11, 1906.

Mr. Maximilian Toch, of New York, gave an illustrated lecture on 'The Trip of the Society of Chemical Industry through England.' It was thoroughly enjoyed by a large audience.

Following this the reports of the secretary and treasurer were read. The finances of the society are in good condition, and there has been a net increase of 27 in the number of members, the total now being 189, with four local associates. During 1905 there were ten scientific meetings held, besides three 'smokers.' Twenty-one papers were presented, three of them being by investigators invited to address the society.

The officers for 1906 were then voted for, with the following result:

*President*—L. M. Tolman.

*First Vice-president*—A. W. Dow.

*Second Vice-president*—Jos. S. Chamberlain.

*Secretary*—C. E. Waters.

*Treasurer*—F. P. Dewey.

*Additional Members of the Executive Committee*—E. A. Hill, E. T. Allen, G. H. Failyer and A. Seidell.

The congratulations of the society were extended to Dr. W. F. Hillebrand on account of his election as president of the American Chemical Society.

C. E. WATERS,  
*Secretary.*

#### THE OREGON STATE ACADEMY OF SCIENCES.

PAPERS have been presented before the Oregon State Academy of Sciences, meeting in Portland, as follows:

May 20—'The Precipitation of Barium Bromide by Hydrobromic Acid,' Professor N. C. Thorne,

Portland Academy. 'Curing and Mounting Wild Flowers,' Dr. M. A. Flinn, Portland.

June 17—'Agriculture in the Philippines,' Professor F. Lamson-Scribner, Washington, D. C.

August 19—'Mammals of Oregon,' Dr. Marcus W. Lyon, Jr., Washington, D. C. 'The Development of the Ovule and Pollen Tube in the Oregon Grape,' Elda R. Walker, University of Nebraska.

September 16—'The Forests of Oregon,' Mr. Edmund P. Sheldon, Portland.

October 21—'Science and the Farm,' Dr. J. R. Withycombe, director of the Oregon Agricultural Experiment Station, Corvallis. 'Some Insect and Fungous Diseases of Fruits,' Professor A. B. Cordley, State College of Agriculture and Mechanic Arts.

November 18—'The Indians and their Care of the Forests,' Dr. Harry E. Lane, Portland. 'Pre-localization in the Egg and Correlated Development,' Professor G. E. Coghill, Pacific University.

The academy has endorsed a plan for beginning a natural history survey of Oregon by formulating check lists of all the museum collections in the state, and of all recorded collections from the state. It is the purpose of the academy to follow these check lists with monographs on various groups as circumstances permit.

Action has been taken to secure permanent rooms for the academy in Portland. It is expected that adequate quarters will be provided for the library of the academy and for a museum which the academy hopes to acquire as time goes on. The private herbarium of Mr. Edmund P. Sheldon, president of the academy, has been loaned by him for deposit in the academy rooms. This herbarium consists of about 10,000 specimens. It will be properly mounted and made accessible for the work of the academy.

G. E. COGHILL,  
*Corresponding Secretary.*

#### THE CLEMSON COLLEGE SCIENCE CLUB.

THE 59th regular meeting of the club was held Friday, November 17.

Dr. Calhoun gave an informal talk upon his work in the west this summer. His talk was illustrated by material which he collected for the museum of natural history in the mining regions of Colorado and Utah.

The principal paper of the evening was given by Dr. Metcalf upon 'Sanitary Conditions in South Carolina.' Dr. Metcalf gave a brief statement of the fundamental principles of sanitation and the special conditions which govern their application in South Carolina, such as subtropical climate in certain portions, rural population, and a large negro element. The conditions leading to the annual prevalence of typhoid fever were deduced from specific instances. The results of three hundred bacterial examinations of the water of a typical open well; the results of observations of the surroundings of this well and the adjacent privy and a study of the bacterial flora brought by flies into the dining room of the nearby house, were presented in outline. The speaker closed with a brief discussion of the hypothetical occurrence of forms resembling *B. coli* on the surface of the plants, and the possible bearing of this on the standard water tests. Portions of this discussion have been published in Bulletin 89, South Carolina Experiment Station and in SCIENCE, October 6, 1905.

F. H. H. CALHOUN,  
*Secretary and Treasurer.*

#### THE MISSOURI SOCIETY OF TEACHERS OF MATHEMATICS (AND SCIENCE).<sup>1</sup>

THE Missouri Society of Teachers of Mathematics (and Science) met in Jefferson City, December 27 and 28, 1905, in conjunction with the State Teachers' Association. Two afternoon sessions were held and were well attended. Mr. H. C. Harvey presided. The following papers were presented:

G. R. DEEN, Rolla: 'Maxima and Minima.'

OLIVER GLENN, Springfield: 'Laboratory Methods in Algebra Teaching.'

A. M. WILSON, St. Louis: 'The Treatment of Limits in Elementary Geometry.'

THOS. JAUDON, Kansas City: 'Some Problems of Arithmetic in the Grades.'

Round Table Discussion: 'What should be taught in Arithmetic and what omitted?' U. S. Hall, Glasgow; G. B. Longan, Kansas City; H.

<sup>1</sup> Proposed amendments to the constitution provide for the addition of the words 'and Science' to the name of the society.

H. Holmes, Kansas City; H. C. Hamey, Kirksville; E. R. Hedrick, Columbia.

At the business meeting provision was made for the submission to the members of amendments to the constitution providing for the enlargement of the society so as to include teachers of science. In future mathematics and science sections will be held in addition to the general meetings. The next meeting will be held in April or May at Columbia. A more complete report of the meeting may be found in *School Science and Mathematics*.

L. D. AMES,  
Secretary.

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DISCUSSION AND CORRESPONDENCE.

RELATION OF MUSEUMS TO EXPERTS.

TO THE EDITOR OF SCIENCE: The letter from Dr. Holland on 'The Relations of Museums to Experts and Systematists who are Engaged in Working Up and Naming Collections,' published in SCIENCE for December 15, seems to me altogether too general and too sweeping for universal acceptance. While I agree with Dr. Holland, fully, in his idea that all material borrowed from a museum or from a collector should be promptly and scrupulously returned, I think there are many cases in which a monographer or a student of a special group is fully entitled to retain material which may be sent him for identification. We are all supposed to be working for the advancement of science—for the establishment of definite facts. If a collector happens to find material which he is incompetent to use, which he can not place and of which he can not recognize the value he should, as a true and philanthropic student, send it to some one who has the ability to use it for the help of other workers. Museum material is worthless so long as it remains unknown and unidentified, and can be made of value only when it is recognized as forming a certain link in the chain. The specialist who visits a museum is in honor bound to leave its specimens intact, but the museum maker, the collector, has no right to ask busy workers for their time and labor without some courtesy in the form of a return. In my own work I have sent hundreds of specimens to specialists for

identification and description of new species, and have never asked, or expected, that the material would be returned to me. I have also worked over many collections made by others and have not hesitated to retain such specimens as I wanted for myself. When a specialist is willing to take the time and trouble to study a collection—at my request—the smallest courtesy I can offer him is the retention of the material with which he has worked. If I do not have full confidence in him as an authority in that particular group I do not send him my unstudied material. Of course there are cases in which a collector finds a specimen which he can not place, but which he recognizes as being rare or unique, and then he is perfectly justified in submitting it to an expert and asking for its return, but such cases should not constitute a general rule.

Dr. Holland expresses the idea that all material studied should remain the permanent property of the original owner. It seems to me that a distinction should be made. When a worker in any line visits a museum, or secures the loan of material for study, he is the party favored, and can have no claim; but when a museum or a collector asks the specialist to work a lot of unrecognized material the worker is justly entitled to such reward as he may find in the retention of the specimens to which he has given his time and work.

S. M. TRACY.  
BILOXI, MISS.

THE LETTERS K AND W IN ZOOLOGICAL NOMENCLATURE.

IN SCIENCE of September 29, page 399, I referred to a practise prevalent in certain quarters, of changing the letters k and w to c and v, respectively, whenever they occur in generic and specific names of animals.<sup>1</sup> At

<sup>1</sup> I there attributed the change of *Kogia* to *Cogia* to Dr. D. G. Elliot; but I find that he did not originate it. The form *Cogia* was used years ago by Wallace (1876), Blanford (1891) and Lydekker (1891). The late Dr. W. T. Blanford had curiously little respect for the original form of names, and even went so far as to alter the name of the well-known ant-genus *Pheidole* to *Phidole*, in Col. Bingham's work on the ants of